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VECTOR CONTROL SYSTEM DIGITAL MARKETING IN THE EXPERIENCE ECONOMY

In articles developed conceptual model systemic management digital marketing on basis vector approach, which based on integration principles economy impressions, quantum economy and theories navigation complex dynamic systems. Relevance research related with because digital marketing stopped be linear consistency actions, and transformed on multidimensional space parallel states that needs fundamentally new logic adoption solutions. The purpose works there are formation three-dimensional models systems vector management digital marketing and disclosure its structural elements, among whose determined object, subject and principles functioning. In the study used methods of system analysis, vector modeling, parametric comparison states, as well as elements analogies with aviation navigation for explanation radar control concepts. In result analyzed logic formation of a system state vector, which describes intensity impressions, scope of coverage and level efficiency. The subject, object, principles are defined functioning vector control systems, which include structure, balance, adaptability and speed limits A model of strategic course is proposed in the form of target vector and justified tactical radar monitoring mechanism, which provides periodic reading status and correction trajectory. Deviation vector calculated between current and target states, the possibility is shown definition angular differences between them, and a numerical example is also given, which demonstrates the operation of the correction algorithm. Analyzed features parallel actions several marketing campaigns and justified application super positional models for evaluation their mutual influence. Practical value works lies in the possibility application proposed vector control systems as a tool navigation digital marketing, which allows determine strategic direction, evaluate deviations in real time, form optimal scenarios corrections and accept more accurate managerial solution .

Keywords: digital marketing management; systems approach; experience economy; tactics; strategy; management principles; vector control

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СИСТЕМА ВЕКТОРНОГО УПРАВЛІННЯ ЦИФРОВИМ МАРКЕТИНГОМ В ЕКОНОМІЦІ ВРАЖЕНЬ

У статті розроблено концептуальну модель системного управління цифровим маркетингом на основі векторного підходу, який базується на інтеграції принципів економіки вражень, квантової економіки та теорії навігації складних динамічних систем. Актуальність дослідження пов'язана з тим, що цифровий маркетинг перестав бути лінійною послідовністю дій, а перетворився на багатовимірний простір паралельних станів, що потребує принципово нової логіки прийняття рішень. Метою роботи є формування тривимірної моделі системи векторного управління цифровим маркетингом та розкриття її структурних елементів, серед яких визначено об'єкт, предмет і принципи функціонування. У дослідженні використано методи системного аналізу, векторного моделювання, параметричного зіставлення станів, а також елементи аналогій з авіаційною навігацією для пояснення концепції радарного контролю. В результаті проаналізовано логіку формування системного вектора стану, який описує інтенсивність вражень, масштаб охоплення та рівень ефективності. Визначено предмет, об'єкт, принципи функціонування системи векторного управління, що включають структурність, збалансованість, адаптивність і обмеження на швидкість змін. Запропоновано модель стратегічного курсу у вигляді цільового вектора та обгрунтовано механізм тактичного радарного моніторингу, який забезпечує періодичне зчитування стану й корекцію траєкторії. Розраховано вектор відхилення між поточним та цільовим станами, показано можливість визначення кутової різниці між ними, а також наведено числовий приклад, що демонструє роботу алгоритму корекції. Проаналізовано особливості паралельної дії кількох маркетингових кампаній та обгрунтовано застосування суперпозиційної моделі для оцінки їх взаємного впливу. Практична цінність роботи полягає у можливості застосування запропонованої системи векторного управління як інструмента навігації цифровим маркетингом, що дозволяє визначати стратегічний напрям, оцінювати відхилення в реальному часі, формувати оптимальні сценарії корекції та приймати більш точні управлінські рішення.

Ключові слова: управління цифровим маркетингом; системний підхід; економіка вражень; тактика; стратегія; принципи управління; векторне управління

Introduction. Digital marketing in modern economic conditions acquires the properties of a complex dynamic system that functions in a multidimensional information environment. The growing turbulence of digital consumer behavior, the parallelism of advertising flows and the intensity of emotional reactions determine the need for new approaches to managing these processes. Scientific research in recent years demonstrates a shift from traditional models of indicator control to system-oriented approaches. In particular, S. Mambile *and al.* (2024), V. Wang *and al.* (2024), S.Tommaso *and al* . (2021) have shown that digital markets form nonlinear attention trajectories that are not amenable to linear prediction. In turn, I. Asante and al. (2024), S. Venkatesh *and al.* (2020) emphasized that marketing systems should be viewed as multi-channel environments with mutually reinforcing effects. These results are consistent with the findings of J. Manoharan (2024), E. Hadiyati *and al.* (2024), Q. Abdullah *and al.* (2024) noted that the quality of digital marketing management is determined by the ability to synchronize the emotional, behavioral, and economic dimensions of communication.

In parallel with this, world scientific thought pays considerable attention to modeling the digital environment as a multidimensional space. Thus, the research of M. Tao and al. (2025), A. Kaponis *and al.* (2025), S. Agarwal *and al.* (2022) showed that managing complex marketing ecosystems requires the use of vector structures to describe user interaction trajectories. P. Flores - Gómez and al. (2025) argued that the economy of impressions forms new parameters of consumer behavior, where emotional signals have the same weight as economic incentives. In this context, the works of A. Marchenko are particularly relevant. *and al.* (2025), Y. Tataryntseva *et al.* (2024), which summarize the principles of digital marketing development based on the experience economy and analyze systemic marketing management in the context of consumer value transformation. These studies confirm that modern management models require more modern approaches to digital marketing management.

A separate direction has become the interpretation of digital marketing as a system with the properties of quantum superposition. According to R. Kamkankaew *and al.* (2025), advertising campaigns operate simultaneously in several information spaces, forming parallel vectors of influence. A similar position is taken by T. Kang (2023), J. Maier *and al.* (2024) who proved that campaign effects should be evaluated as the resulting interaction of channels, rather than individual signals. This coincides with the results of R. Moreno *and al.* (2024), M. Talaat *and al.* (2023), which emphasizes the need to use mathematical models to describe the trajectories of marketing signals in multidimensional spaces. The totality of these works indicates that digital marketing is evolving in the direction of systems where the movement of information and behavioral flows can be described by vector functions.

The relevance of this study is due to the need to create a holistic theory of vector control of digital marketing, which allows describing the state of the system simultaneously in three coordinates. The strategic problem is that, despite the presence of a large number of tools, there is no consistent navigation model that would allow shaping the course of the marketing system, assessing deviations and correcting the trajectory based on structured data. The relevance is enhanced by the influence of the economy of impressions, which increases the role of the emotional component, and the accelerated growth of parallel advertising flows that form quantum-like superpositions. In such conditions, a methodology is needed that is able to integrate emotional, comprehensive and economic parameters into a single management system.

The purpose of the study is to form a theoretical and methodological basis for a vector management system for digital marketing, within which the object, subject, principles of functioning and structure of the navigation model are defined. To achieve the goal, the following tasks were set: to generalize scientific approaches to modeling digital marketing systems; to determine the essence and structure of vector management; to develop a three-dimensional model of the state of the marketing system; to substantiate the mechanism of the strategic course; to form a radar system of tactical monitoring; to demonstrate the capabilities of the system through mathematical calculations and numerical examples. The scientific novelty lies in the proposal of a navigation model of digital marketing, which integrates system, vector and quantum approaches and allows managing marketing activities as a moving object in a three-dimensional coordinate space.

Literature review. Modern scientific research on digital marketing increasingly views it as a complex dynamic system, the behavior of which is shaped by the interaction of emotional, behavioral and economic factors. Mambile *and al.* (2024) emphasize that digital markets generate unstable attention trajectories that require analysis in multidimensional models, where each parameter is dynamic and interconnected with the others. V. Shankar *and al.* (2020) add that the marketing ecosystem cannot be assessed in two-dimensional coordinates, as channels reinforce each other, forming complex superpositions of effects. Manoharan's (2024) study emphasizes that any management model must integrate not only the results of interactions, but also the emotional preconditions of behavior that determine user reactions.

The key principles of systemic modeling of marketing processes are reflected in the works of Talaat *and al.* (2023), who showed that parametric and vector models provide a more accurate representation of the trajectories of changes in the states of marketing systems. Flores-Gómez *and al.* (2025) consider the economy of impressions as an environment in which emotional reactions acquire the status of a full-fledged management parameter that must be taken into account in system models. In the works of Marchenko *and al.* (2025) and Tataryntseva *et al.* (2024) analyzed in detail the development of digital marketing under the influence of the dynamics of impressions and changes in consumer values, which deepens the understanding of the complexity of processes and justifies the need for systemic coordination of influence vectors.

A separate layer of literature is devoted to the multidimensionality of digital environments and their similarity to physical systems. Wang *and al.* (2024) proposed to interpret parallel advertising campaigns through models of attention trajectories that exist simultaneously in different information spaces. Asante *and al.* (2025) emphasized the importance of evaluating results through the cumulative effects of channel interactions, which is a characteristic feature of nonlinear systems. Similar conclusions were made by Ciarli *and al.* (2021), who proved that vector models with time-varying components are most suitable for describing the movement of information signals.

Other researchers are also considering the issues of systematicity and management of complex marketing processes. Qi *and al.* (2024) emphasize that modern marketing systems require navigational logic similar to the management of complex technical objects. Hadiyati and al. (2024) indicate that traditional KPIs do not reflect the structural interaction of parameters and should be replaced by integrated management models. In addition, V. Opreana *and al* (2021) propose a multi-level approach to behavioral signal management that involves setting strategic and tactical parameters, which is consistent with the concept of radar monitoring in the proposed vector model.

Summarizing the results of existing research, it can be argued that modern scientific thought is moving in the direction of monodisciplinary models to integrated system structures, where the vector approach allows describing the movement of marketing systems in a three-dimensional state space. The scientific literature confirms the need to transition to models that can explain the interaction of emotional stimuli, reach and economic performance as a single process in Kaponis *and al.* (2025); Tao and al. (2025); Kamkankaew *and al.,* (2025). This creates the basis for the formation of the concept of system vector management of digital marketing, which integrates existing theoretical developments and offers a new methodological interpretation of marketing process management.

Materials and Methods. The materials and methods of the study are based on a comprehensive approach to the formation of a vector model of digital marketing management. The basis was empirical data on audience behavior in social networks and digital advertising platforms, obtained through analytics tools. The study was based on the hypothesis that the marketing system is adequately described in a three-dimensional coordinate space, where each axis corresponds to a separate parameter, and their combination forms a state vector.

The methodology included five stages. The first was –a structural and functional analysis of digital marketing processes to identify key system parameters. The second –was the formalization of the state vector through a mathematical description of the coordinates of the intensity of impressions (I), coverage (C) and efficiency (E) using parametric normalization for comparability of heterogeneous indicators. The third stage involved the construction of a mathematical apparatus for vector control using analytical geometry methods: calculation of vector modules, angles between them and deviation indicators. The deviation vector formula allowed us to estimate the difference between the actual and target states, and the derivatives – to analyze the dynamics of the system over time. The fourth stage – was the formation of a radar monitoring mechanism based on discrete reading of system parameters through cycles T1-T2 with coordinate recalculation, determination of the correction level and forecasting of future values. The fifth stage –was the development of a vector superposition model to reflect the parallelism of several campaigns, where the resulting portfolio vector is calculated as a weighted sum of partial vectors. The methodology ensures full reproducibility of results with statistical data on interaction indicators, reach, and economic results, creating a holistic complex for studying digital marketing as a navigation system in three-dimensional space.

Results and Discussion. *Generalization of scientific approaches to modeling digital marketing systems.* Modern scientific approaches to modeling digital marketing systems are characterized by considerable diversity, but most of them are reduced to linear, descriptive or KPI-oriented models that do not reflect the dynamic nature of the digital environment. Researchers focus on measuring user behavioral reactions, but mostly treat them as separate indicators, rather than as coordinates of system movement (Vinerean *and al*, 2021; Moreno *and al.,* 2024). Within the experience economy, attention is focused on the emotional nature of the user's interaction with the brand, but researchers do not offer a model that can combine experience, reach, and economic efficiency into a single formalized space (Flores-Gómez *and al*., 2025; Marchenko *and al*., 2025). Works in the field of digital analytics indicate the need for deeper algorithmic methods of data processing, but they lack navigational logic that would allow describing trajectories of changes in the marketing system and deviations from the strategic course (Kaponis *and al* ., 2025; Talaat *and al* . , 2023).

Further analysis shows that in world research there is no approach that would consider digital marketing as an object of navigational control, moving in a multidimensional information space by analogy with an aviation control system (Qi *and al,* 2024; Wang *and al.,* 2024). Existing models do not take into account the principle of gradual corrections inherent in aviation autopilot systems, where the course change occurs through a small angle of deviation, which is necessary to stabilize the movement in conditions of "information turbulence" (Mambile *and al.*, 2024; Ciarli *and al.,* 2021). In addition, scientific approaches do not cover the phenomena of parallelism and superposition of information flows, which are characteristic of the digital environment, in which dozens of campaigns interact simultaneously (Asante *and al.,* 2025; Shankar *and al,* 2020). Thus, a generalization of existing approaches demonstrates that the available literature does not provide models that integrate behavioral, informational, and economic parameters.

Defining the essence and structure of vector digital marketing management. It is proposed to consider the system management of digital marketing through an analogy with aviation navigation, since both areas operate with dynamic objects moving in multidimensional space and require continuous control of course parameters. Just as in flight an aircraft is controlled by three main parameters – course, altitude and speed - so in digital marketing control is carried out by three coordinates: impressions, reach and efficiency. An aviation autopilot never receives the command "fly to city X", instead it receives a set of coordinates specified as angles, vectors and speed parameters; similarly, to the marketing system, separate KPIs are not set, but a target vector is determined in three-dimensional space, which describes the direction of communication development. Such a parallel is fundamental, because it transfers marketing management from a set of point solutions to the level of full-fledged navigation, where the key is not the statics of indicators, but their dynamics and consistency.

The hypothesis of the study is that the marketing system is adequately described in a three-dimensional coordinate space, where each axis corresponds to a separate parameter, and their combination forms a state vector. The digital marketing vector management system is a navigation and analytical model in which the state of the digital marketing system is described by a multidimensional vector, and management is carried out through a coordinated adjustment of its coordinates in accordance with the strategic course and radar tactical monitoring data in a dynamic information environment. System management digital marketing is based on the understanding that marketing activity is a complex dynamic system in which many interactions between channels, audiences, senses and tools form the resulting state at each moment in time. Unlike from traditional models focused on individual KPI, system approach provides description marketing activity as a single managed object with a set of coordinates, internal relations and external influences.

Formation elements systems management digital marketing is related from development and implementation managerial influence subjects object management for the purpose of obtaining impressions users, implementation targeted actions and achievements digital marketing goals. This achieved by using principles, strategies management and takes into account factors external and internal. The components of the digital marketing vector management system are presented in Fig. 1.

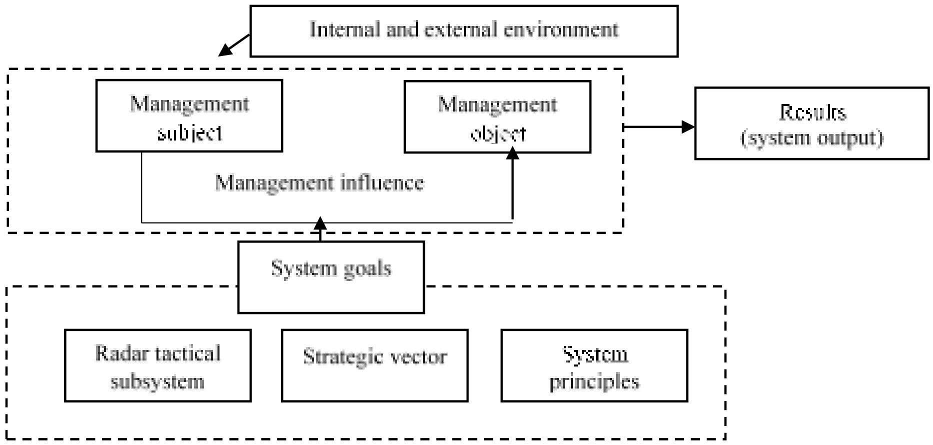

Fig.1. –Components of a vector digital marketing management system

Source: prepared by the authors

The vector control system must be flexible and stable at the same time, in the conditions of information turbulence of the digital environment, allowing the marketing portfolio to move steadily towards the target trajectory, avoiding significant exchange rate deviations.

State model of a vector control system for digital marketing. In order to ensure the controllability of the system, a state measurement model is needed that can be used for navigation, similar to how an autopilot controls an airplane using a set of vector indicators. In digital marketing, such a navigation space is a three-dimensional coordinate system, where each axis reflects a critically important dimension (Fig. 2). The impression axis (I) describes the emotional resonance and includes likes, reactions, comments, UGC and other signals of the audience's emotional state. The reach axis (C) captures the number of unique contacts, views or impressions. The efficiency axis (E) characterizes the financial result – ROI, indicators.

The axes form a state vector $\vec{M}$= (I, E, C), which is a mathematical representation of the current position of the marketing system in the space of possible states. This approach is important because it allows you to replace a set of disparate metrics with a single, consistent structure. The vector makes it possible to determine the strength of the campaign's impact, the direction of development and deviations from the goal. It is this ability that makes vector management fundamentally different from traditional KPI control, which does not take into account the multidimensionality of digital interaction. The radar module is a tactical tool that displays the current position of the vector $\vec{M}_{current}$ and the necessary adjustments $\Delta \vec{M}$, and the frequency of its review depends on the sensitivity of the system, the sprint structure and the volatility of the market, being optimized by function according to the principle of the adaptive radar cycle (formula 1):

$$y = f(Q_{attention}, Stage) \qquad (1)$$

where y – review frequency (volatility), the indicator determines how often the team should analyze Radar data and adjust the course $\vec{M}$(e.g. once a day, once a week, every 3 days); the higher w , the more often the adjustment is needed; f– v indicates that w is a function (depends) on the parameters listed in parentheses; this means that the frequency of viewing is not fixed, but is calculated based on current conditions; $Q_{attention}$ – refers to the sensitivity or volatility of attention; it is a measure of external instability or unpredictability; it can be measured

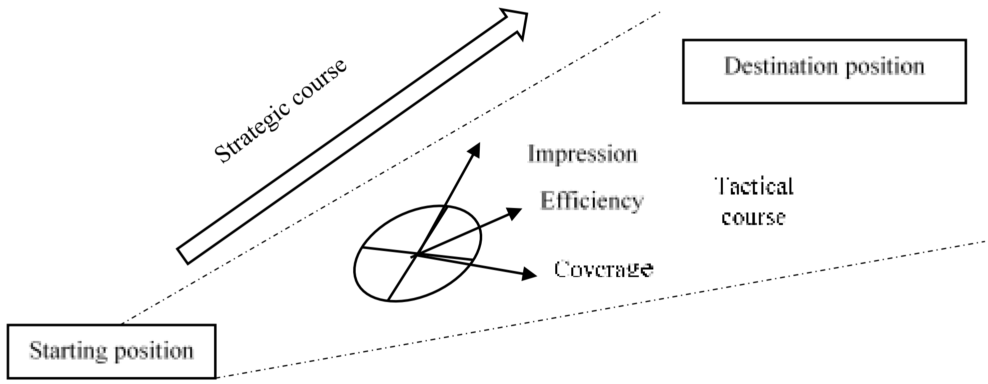

Fig. 2. – The main components of vector digital marketing management

Source: prepared by the authors

as the standard deviation (Q) of key external metrics or the level of noise in the data. High $Q_{attention}$ (e.g., during political events, competitor launches, sudden trend changes) means that the system is very sensitive and requires more frequent reviews ($Q_{attention}$ is growing).$Stage$ – denotes the Current Stage (Stage) of the Campaign or Sprint. This parameter reflects the internal control logic. For example, at the initial stage (Stage = "Launch") or at the critical stage (Stage = "Peak"), when high accuracy is required, *y* will be higher. At the stabilization stage (Stage = "Maintenance"), *w* can be reduced. Formula (1) states that the required rate of course correction *y* is determined as a combination of the external instability $Q_{attention}$ and the internal need for control *Stage.*

Justification of the strategic course mechanism. If tactical management is based on Radar (monitoring the current state $\overrightarrow{M}$ and calculating the nearest step-by-step adjustments Δ $\overrightarrow{M}$), then strategic management is based on:

1. The target vector is $\overrightarrow{M}_{target}$ – this vector (point B) determines the final, desired state of the system in the multidimensional space (I, E, C); it is not just an abstract goal, but a specific set of target coordinates to which the system must arrive by the end of the strategic period, and the choice of this vector is the first and most important strategic decision;

2. Optimal trajectory (course); strategy is essentially the choice of the best trajectory or "course" of movement from the initial state $\overrightarrow{M}_{current}$ to the target $\overrightarrow{M}_{goal}$ similar to the choice of a flight route; this trajectory is optimized taking into account the minimization of costs and external risks; state vector M $^{\rightarrow}$ State vector $\overrightarrow{M}$ fixes the current coordinates of the system in space (I , E , C) while the action vector $\overrightarrow{B}$ is a control pulse that is added to the current state$\overrightarrow{M}$ on each cycle (T) for its planned movement to the target point.$\overrightarrow{B}$ –Action/Correction vector, from English . Booster, g means increment or corrective effect – what we do to change the state. It is a force or the momentum that we add to the system. $\overrightarrow{B}$ τi – it specific actions (e.g., +1.1 to Intensity, +0.6 to Efficiency) that we implement for phase T1.

3. Module's maturity (X, Y); Strategy obliged be based on the principal fundamentalism, which uses the Maturity Module (X – organizational, Y – technological readiness) to determine which innovative goals are realistically achievable. The system operates in three dimensions spacious mills with axes$\overrightarrow{M}$ = (I, E, C). Coordinates X (Organizational maturity) and Y (Technological maturity) are not axes of this vector space. They are scalars limiting parameters that are being established outside with respect to the state vector $\overrightarrow{M}$, but limit it. The analogy with aircraft control is as follows. Suppose that the flight of an airplane is described by a three-dimensional vector:$\overrightarrow{M}$ = (Speed, Altitude, Course). X and Y are technical regulations and experience pilot. For example, X can be the maximum number of flight hours pilot, and Y is the maximum speed that can to withstand the glider of an airplane. They are not part of position airplane, but they limit its actions.

Module's maturity (X, Y) provide compliance with the fundamentality principle I≤ min (X, Y) + 1. This principle states that you can't be strategic put aim high level Impressions I =5, for example, if your Organizational readiness X or Technological readiness Y low X =2, Y =3. In this case min (X, Y) + 1 = 2 + 1 = 3. Therefore, the maximum allowed I is 3. Setting target Z =5, you violate fundamental principle of sustainability systems.

4. The strategy is based on the ability to take into account synergies between campaigns, ensuring compliance with the Emergence Principle and the Balance Principle. When a marketing system simultaneously runs several campaigns on different platforms (Facebook, Instagram, TikTok, etc.), an aggregate portfolio vector M $^{\rightarrow}$ portfolio is used, which is calculated as a weighted sum of the vectors of individual campaigns according to the formula (2):

$$\overrightarrow{M}_{briefcase.} = \sum_{i=1}^{N} wi \times \overrightarrow{M}_{I} = w_1 \cdot \overrightarrow{M}_{fb} + w_2 \cdot \overrightarrow{M}_{insta} + w_3 \cdot \overrightarrow{M}_{tiktok} + w_n \cdot \overrightarrow{M}_{n} \quad (2)$$

where w_i are the weights of each campaign ($\Sigma w_i = 1$), determined in proportion to the budget, strategic priority, or expected impact; $\overrightarrow{M}_i$ is the state vector of an individual campaign in the space (I, E, C).

Implementation of a vector digital marketing management system. To demonstrate the practical operation of the vector digital marketing management system, the situation of launching a seasonal advertising campaign of a brand operating in the fashion market segment with a high level of competition and significant dependence on the emotional perception of content was considered. The target audience was women aged 20–35, who are characterized by high sensitivity to visual communication, influencer recommendations, and storytelling formats. The initial parameters of the campaign showed that the formed vector $\overrightarrow{M}_{currently}$ had the values I = 4.1, E = 3.7, C = 4.3, which reflected only partial compliance with the brand's strategic course. At the same time, market analysis revealed increased activity of competitors in adjacent segments, which created information noise and increased deviations from the desired trajectory.

IN within the strategic planning, the target vector $\overrightarrow{M}_{target}$ is formed, which determined necessary system motion parameters: I = 6.1, E = 4.7, C = 5.3. Deviations between current and target states are given by the vector Δ $\overrightarrow{M}$= (2.0;1.0;1.0), which outlined the scale of management correction and justified the need for the use of radar monitoring. On this basis, the implementation of a vector control mechanism was initiated, in which each cycle includes the fixation $\overrightarrow{M}_{current,}$ discrete read deviation $\overrightarrow{\Delta M}$, application of correction vector $\overrightarrow{B}$τ and approximation systems to $\overrightarrow{M}_{target.}$

The monitoring mechanism is based on discrete reading of system parameters and algorithmic analysis of dynamic deviations $\overrightarrow{\Delta M}$ to determine the frequency of radar cycles (y). The model is implemented through a sequence of cycles (T1–T2, etc., as necessary), where at each step the current state is fixed $\overrightarrow{M}$ and an action vector $\overrightarrow{Вт}$ (correction) is added for planned approach to the target vector $\overrightarrow{M}_{target}$. Radar monitoring model for the studied advertising companies are presented in table.

Table - Radar monitoring model

Phase	Indicator	Value / Calculation	Principle
T0	$\overrightarrow{M}_{current}$	I=4.1, E=3.7, C=4.3	Current condition (Weighted amount)
T0	$\overrightarrow{M}_{goal}$	I=6.1, E=4.7, C=5.3	Strategic course
T0	$\overrightarrow{\Delta M}$	I=2.0, E=1.0, C=1.0	Required correction

Source: prepared by the authors

Phases T0, T1, and T2 – are discrete time steps of management, where T0 captures the initial gap between the current and target states, and T1 and T2 are successive cycles of applying corrective actions to achieve the planned goal. The transition to the first adjustment (T1) occurs by applying an action vector $\overrightarrow{Вт1}$, that is aggressively aimed at increasing economic efficiency (E) and removing a significant part of the initial gap identified at T0.

1) T1 First adjustment (Aggressively improve efficiency and close the gap). Desired action $\overrightarrow{Вт1}$: (Plan: E increases by 0.6, which is the main focus $\overrightarrow{Вт1}$= (I=1.1, E=0.6, C=0.3). Calculation $\overrightarrow{M}_{t1:}$ According to the model, the planned increase is added to the current state. Result $\overrightarrow{M}_{t1:}$ $\overrightarrow{M}_{t1}$ = $\overrightarrow{M}_{current}$ (T0) + $\overrightarrow{Вт1}$= (4.1 + 1.1, 3.7 + 0.6, 4.3 + 0.3) = (I=5.2, E=4.3, C=4.6)

2) T2 Second adjustment (Achievement of target state). New gap $\overrightarrow{\Delta M}$: $\overrightarrow{M}_{target}$ – $\overrightarrow{M}_{t1}$ = (6.1 - 5.2, 4.7 - 4.3, 5.3 - 4.6) = (0.9, 0.4, 0.7). Desired action $\overrightarrow{Вт2}$ (Finalization. E increases by 0.4, completing the target increment of 1.0) = (I=0.9, E=0.4, C=0.7). Result $\overrightarrow{M}_{t2:}$ $\overrightarrow{M}_{t2}$ = $\overrightarrow{M}_{t1}$ +$\overrightarrow{Вт2}$= (5.2 + 0.9, 4.3 + 0.4, 4.6 + 0.7) = (I=6.1, E=4.7, C=5.3). Target vector $\overrightarrow{M}_{goal}$ achieved, $\overrightarrow{M}_{t2}$ = $\overrightarrow{M}_{goal.}$

Conclusions. As a result of the research, a vector control system for digital marketing was successfully formalized and substantiated, based on the quantum-vector paradigm and engineering principles of controlling complex nonlinear systems. The main result of the work is the transformation of strategic goals of digital marketing into a measurable control vector. = $\overrightarrow{M}$(I, E, C), which integrates Impression (I), Cost-Effectiveness (E), and Reach (C). This allows you to move from reactive control, which is based on a single indicator ROI, to proactive, balanced control over the multidimensional state of the system.

Within the framework of a practical radar monitoring model (cycles T0-T2), a mechanism for overcoming the initial state discontinuity vector $\overrightarrow{M}_{init}$ = (2.0, 1.0, 1.0) was demonstrated by sequentially applying the action vectors $\overrightarrow{Вт1}$and $\overrightarrow{Вт2}$. In particular, the calculations confirmed the possibility of a planned increase in economic efficiency (E) by 1.0 (from 3.7 to 4.7) during two discrete control cycles, which is evidence of the operational efficiency of the system.

Nine mandatory principles, including the Fundamentality Principle and the Minimum Disruption Principle, are identified to ensure the structural integrity of the system and prevent the uncontrolled dominance of impressions (I) to the detriment of fiscal sustainability (E) or organizational readiness.

Prospects for further research are to develop and empirically validate a dynamic model for determining weight coefficients y_i for portfolio aggregation (formula 2) based on machine learning algorithms, as well as to create an adaptive function$y = (Q_{attention}, Stage)$ to automatically optimize the frequency of radar cycles depending on the volatility of audience attention and the campaign lifecycle.

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Conflict of Interest. The authors declare that there are no commercial or financial relationships, or any other potential sources of conflict of interest, that could affect the objectivity of the results presented in this manuscript.

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